IN THE CLAIMS

Please replace all prior versions, and listings, of claims in the application with the following list of claims. Additions are indicated by underlining and deletions are indicated by strikeouts and/or double bracketing.

1-64. (Cancelled)

65. (Previously Presented) A bipolar device comprising:

first and second substantially planar substrates;

a first electrode having a substantially planar base disposed on the first substrate, and a first surface for positioning proximate to an opposing, second electrode disposed on the second substrate,

the first electrode being reticulated so as to define a plurality of protrusions and intervening indentations providing a surface area at least 1.5 times the theoretical surface area of a smooth non-reticulating surface,

wherein the protrusions of the first electrode have a length *l*, as measured from the substantially planar base to the first surface, and a cross-sectional thickness *a*, and the protrusions extend in a direction away from the base of the first electrode and towards the base of the second electrode,

wherein the cross-sectional thickness *a* of the protrusions of the first electrode varies along the length *l* of the protrusions of the first electrode such that the cross-sectional thickness, when averaged along the length of the protrusions, is less than about 100 microns,

wherein the second electrode has a substantially planar base disposed on the second substrate, and a second surface for positioning proximate to the opposing, first electrode disposed on the first surface, the second electrode being reticulated so as to define a plurality of protrusions and intervening indentations, the protrusions having a length *m*, as measured from the substantially planar base to the second surface, the protrusions extending in a direction away from the base of the second electrode and towards the base of the first electrode such that the first and second reticulating electrodes are interpenetrating, and

wherein each protrusion consists essentially of electrode material and includes a first end connected to the base of its respective electrode, and a second end extending away from the base toward the base of the other electrode, wherein each respective base connects each protrusion of its respective electrode to each adjacent protrusion of the electrode.

66. (Previously Presented) The bipolar device of claim 65, wherein the protrusions are positioned periodically, aperiodically, or randomly on the first reticulating surface.

67. (Previously Presented) The bipolar device of claim 65, wherein the first surface has a surface area that is at least 2 times the theoretical area of a smooth, non-reticulated configuration.

68. (Previously Presented) The bipolar device of claim 65, wherein the first surface has a surface area that is at least 2.5 times the theoretical area of a smooth, non-reticulating configuration.

69. (Previously Presented) The bipolar device of claim 65, wherein the first surface has a surface area that is at least 3 times the theoretical area of a smooth, non-reticulating configuration.

70. (Previously Presented) The bipolar device of claim 65, wherein the first surface has a surface area that is at least 4 times the theoretical area of a smooth, non-reticulating configuration.

71. (Previously Presented) The bipolar device of claim 65, wherein the first surface has a surface area that is at least 5 times the theoretical area of a smooth, non-reticulating configuration.

72. (Previously Presented) The bipolar device of claim 65, wherein the cross-sectional width *a* of the protrusion increases at cross-sections approaching the base of the first electrode.

73. (Previously Presented) The bipolar device of claim 65, wherein a cross-sectional area of the protrusion at a first position near to the base of the first electrode is greater than a cross-sectional area of the protrusion at a second position that is farther from the base.

74-76. (Cancelled)

77. (Previously Presented) The bipolar device of claim 65, wherein the opposing electrode is reticulated so as to define a plurality of protrusions and intervening indentations providing a surface area at least 1.5 times the theoretical surface area of a smooth non-reticulating surface, wherein the protrusions have a cross-sectional thickness *b*.

78. (Previously Presented) The bipolar device of claim 65, wherein the opposing electrode is reticulated so as to define a plurality of protrusions and intervening indentations providing a surface area at least 1.5 times the theoretical surface area of a smooth non-reticulating surface, wherein the protrusions have a cross-sectional thickness *b* and wherein the cross-sectional thickness *b* varies along the length *m* of the protrusion.

79. (Previously Presented) The bipolar device of claim 78, wherein the second surface has a surface area at least 2 times the theoretical surface area of a smooth non-reticulating surface.

80. (Previously Presented) The bipolar device of claim 78, wherein the second surface has a surface area at least 2.5 times the theoretical surface area of a smooth non-reticulating surface.

81. (Previously Presented) The bipolar device of claim 78, wherein the second surface has a surface area at least 3 times the theoretical surface area of a smooth non-reticulating surface.

82. (Previously Presented) The bipolar device of claim 78, wherein the second surface has a surface area at least 3.5 times the theoretical surface area of a smooth non-reticulating surface.

83. (Previously Presented) The bipolar device of claim 78, wherein the second surface has a surface area at least 4 times the theoretical surface area of a smooth non-reticulating surface.

84. (Previously Presented) The bipolar device of claim 78, wherein the second surface has a surface area at least 5 times the theoretical surface area of a smooth non-reticulating surface.

85. (Previously Presented) The bipolar device of claim 78, wherein the protrusions of the second reticulating surface are positioned periodically, aperiodically or randomly.

86. (Previously Presented) The bipolar device of claim 78, wherein the cross-sectional width *b* of the protrusion increases at cross-sections approaching the base of the opposing electrode.

87. (Previously Presented) The bipolar device of claim 78, wherein a cross-sectional area of the protrusion at a first position near to the base of the first electrode is greater than a cross-sectional area of the protrusion at a second position that is farther from the base.

88. (Previously Presented) The bipolar device of claim 78, wherein the cross-sectional area of the protrusions of the second reticulating surface increases at cross-sections approaching the base of the opposing electrode.

89-90. (Cancelled)

91. (Previously Presented) The bipolar device of claim 78, wherein the second reticulating surface of the opposing electrode is complementary to the first reticulating surface of the first electrode.

92. (Previously Presented) The bipolar device of claim 91, wherein the average distance between complementary reticulating surfaces is less than 100 microns.

93. (Previously Presented) The bipolar device of claim 91, wherein the average distance between complementary reticulating surfaces is less than 50 microns.

94. (Previously Presented) The bipolar device of claim 91 wherein the average distance between complementary reticulating surfaces is less than 25 microns.

95. (Previously Presented) The bipolar device of claim 91, wherein the average distance between complementary reticulating surfaces is less than 10 microns.

96. (Previously Presented) The bipolar device of claim 78, further comprising an electrolyte positioned between the complementary first and second reticulating surfaces.

97. (Previously Presented) The bipolar device of claim 65, wherein the first electrode is porous.

98. (Previously Presented) The bipolar device of claim 97, wherein the opposing electrode is porous.

99-128. (Cancelled)

129. (Previously Presented) The bipolar device of claim 65, wherein the protrusions are positioned aperiodically on the first reticulating surface.

130-150. (Cancelled)

151. (Previously Presented) The bipolar device of claim 65, wherein the first electrode is porous, the first electrode having an average porosity of from about 10% to about 70%.

152-160. (Cancelled)

161. (Previously Presented) The bipolar device of claim 151, wherein the first electrode has an average porosity of from about 20% to about 50%.

162. (Previously Presented) The bipolar device of claim 151, wherein the first electrode has an average porosity of from about 30% to about 45%.

163. (Previously Presented) The bipolar device of claim 65, wherein l/a is greater than 2.

164. (Previously Presented) The bipolar device of claim 65, wherein the thickness and the width of each protrusion are each a.

165. (Previously Presented) The bipolar device of claim 65, wherein at least one of the first substrate and the second substrate is a current collector.

166. (Previously Presented) The bipolar device of claim 65, wherein the distance between the first surface of the first electrode closest towards the base of the second electrode, and the substantially planar base of the first electrode, as measured in a direction perpendicular to the base of the first electrode, varies between 0 and l,

and wherein the distance between the second surface of the second electrode closest towards the base of the first electrode, and the substantially planar base of the second electrode, as measured in a direction perpendicular to the base of the second electrode, varies between 0 and m.

167. (Previously Presented) A bipolar device comprising:

a first reticulated electrode comprising a first electrode base portion and a plurality of first electrode protrusions each having a proximal end by which each first electrode protrusion is connected to the first electrode base portion, and each extending from the first electrode base portion in a direction substantially perpendicular to the first electrode base portion toward a distal first protrusion end, the first electrode protrusions defining a series of first electrode indentations intervening the first electrode protrusions;

a second, opposing reticulated electrode comprising a second electrode base portion and a plurality of second electrode protrusions each having a proximal end by which each second electrode protrusion is connected to the second electrode base portion, and each extending from the second electrode base portion toward the first electrode base portion in a direction substantially perpendicular to the second electrode base portion toward a distal second protrusion end, the second electrode protrusions defining a series of second electrode indentations intervening the second electrode protrusions;

wherein the first electrode and second electrode are positioned in non-contacting, opposing relation to each other with the first electrode protrusions in interdigitating relation with the second electrode protrusions, with the first electrode protrusions in the second electrode indentations and the second electrode protrusions in the first electrode indentations; and

wherein each of the first and second electrode protrusions consists essentially of electrode material and has a length, as measured from the respective electrode base portion to each distal protrusion end, and a cross-sectional thickness, such that the cross-sectional thickness, when averaged along the length of each protrusion, is less than about 100 microns.

168. (Previously Presented) The bipolar device of claim 65, wherein the bipolar device is an energy storage device.

169. (Previously Presented) The bipolar device of claim 167, wherein the bipolar device is an energy storage device.

170. (Previously Presented) The bipolar device of claim 167, wherein the first electrode protrusions have a cross-sectional width that increases at cross-sections approaching the base portion of the first electrode.

171. (Previously Presented) The bipolar device of claim 167, wherein a cross-sectional area of a first electrode protrusion at a first position near to the base portion of the first electrode is greater than a cross-sectional area of the first electrode protrusion at a second position that is farther from the base portion of the first electrode.

172. (Previously Presented) The bipolar device of claim 167, wherein a cross-sectional area of a second electrode protrusion at a first position near to the base portion of the second electrode is greater than a cross-sectional area of the second electrode protrusion at a second position that is farther from the base portion of the second electrode.

173. (Previously Presented) The bipolar device of claim 167, wherein the second electrode protrusions have a cross-sectional width that increases at cross-sections approaching the base portion of the second electrode.

174. (Previously Presented) The bipolar device of claim 167, wherein the average distance between the first electrode and the second electrode is less than 100 microns.

175. (Previously Presented) The bipolar device of claim 167, wherein t the average distance between the first electrode and the second electrode is less than 50 microns.

176. (Previously Presented) The bipolar device of claim 167 wherein the average distance between the first electrode and the second electrode is less than 25 microns.

177. (Previously Presented) The bipolar device of claim 167, wherein the average distance between the first electrode and the second electrode is less than 10 microns.

178. (Previously Presented) The bipolar device of claim 167, further comprising an electrolyte positioned between the first electrode and the second electrode.

179. (Previously Presented) The bipolar device of claim 167, wherein the first electrode is porous.

180. (Previously Presented) The bipolar device of claim 167, wherein the second electrode is porous.

181. (Previously Presented) The bipolar device of claim 167, wherein the first electrode is porous, the first electrode having an average porosity of from about 10% to about 70%.

182. (Previously Presented) The bipolar device of claim 167, wherein the first electrode has an average porosity of from about 20% to about 50%.

183. (Previously Presented) The bipolar device of claim 167, wherein the first electrode has an average porosity of from about 30% to about 45%.

184. (New) The bipolar device of claim 65, wherein the bipolar device is a battery.

185. (New) The bipolar device of claim 65, wherein the bipolar device is a rechargeable battery.

186. (New) The bipolar device of claim 65, wherein the bipolar device is a lithium ion battery.

187. (New) The bipolar device of claim 167, wherein the bipolar device is a battery.

188. (New) The bipolar device of claim 167, wherein the bipolar device is a rechargeable battery.

189. (New) The bipolar device of claim 167, wherein the bipolar device is a lithium ion battery.